

REMARKS

Claims 19, 24-25, and 28-54 are pending. Claims 19, 39, and 54 have been amended to better define the integrally formed breakable weakened zone of the ring body. Applicant responds to each of the Action's rejections in the order in which they are presented in the Action.

I. Section 103(a) Rejections Overcome

A. Claims 19, 24-38, and 43-54 are not rendered obvious under 35 U.S.C. §103(a) by the teachings of PCT Publication No. WO 01/28887 (Brand *et al.*) in view of U.S. Patent No. 5,192,085 (McOnie) and further in view of U.S. Patent No. 4,151,779 (Timmer).

Applicant respectfully traverses these rejections.

Claim 19 is novel over Brand at least because Brand does not teach provision of a fixation device having a ring body which is manufactured with an endless angular extent and an integrally formed weakened zone therein. Brand does not teach that the weakened zone is a structural discontinuity in the body, wherein the structural discontinuity is a notch. Brand does not teach a notch which extends from the inner circumferential surface to the outer circumferential surface. Brand does not teach forming an axial split in the body at the weakened zone.

The Examiner argues that McOnie discusses a method of fixing a first part of a multi-part assembly to a second part thereof. Applicant respectfully submits that this is incorrect for at least the reasons that McOnie fails to teach a ring manufactured with an integrally formed weakened zone therein. In fact, McOnie teaches only that a first and second ring of a sealing assembly 27 can be broken in separate stages of a manufacturing process by: (1) securely bonding an elastomeric rotary face cup 14 to the rear portion of the outer circumference of the rotary face seal ring 16; (2) then fracturing the rotary face seal ring 16 at two points forming approximately equal halves; (3) then cutting, or otherwise separating, the elastomeric cup entirely through its cross section at a cut line 36 directly adjacent to one of the rotary seal ring fracture lines; and finally, optionally (4) cutting the elastomeric cup... at a point adjacent to the other rotary face

seal ring 16 fracture line 41 and diametrically opposite cut line 36 in order to form a hinge point.

McOnie is silent in regard of how the first ring, seal ring 16, is fractured. No integrally formed weakened zone is disclosed. McOnie is similarly silent with regard to the second ring, rotary face cap 16. McOnie discloses only that the face cap can be cut or otherwise separated at first, and (optionally) second, positions and again, no integrally formed weakened zone is disclosed.

Examiner argues that Timmer teaches it is desirable to form rings with weakened zones in order to form rings that can be split without becoming entangled with other rings. See: col.1, lines 11-35 and col. 3, lines 16-20. Applicant respectfully submits that this is incorrect. The weakened zone of Timmer is configured to allow deformation of the ring at that point so that the closed ring can be moved from a first configuration to a second configuration. In particular Timmer states at column 1, lines 30-35 that the invention of Timmer comprises: "...a closed uninterrupted angular shape...including a weakened part which allows the adjacent end parts to be pressed to each other without disengaging the endparts from the weakened part.." It is therefore a clear requirement that the Timmer ring can be readily deformed *without breaking*, hence Timmer does not recite a weakened zone as claimed in our claimed invention.

The Examiner states that the present rejection is based on a combination of Brand, McOnie and Timmer references, and that one cannot show non-obviousness by attacking references individually where the rejections are based on such a combination. However, Applicant respectfully asserts that the combination of references cited by the Examiner does not disclose all the features of Applicant's claimed invention, that Applicant's claimed invention is therefore non-obvious and that, in any event, the aforesaid combination renders the primary reference inoperable for its intended purpose. In more detail, taking Brand as the primary reference, in combination with McOnie, in combination with Timmer, said combination fails to recite, at least, a ring body manufactured with an integrally formed weakened zone, in which the weakened zone is a structural discontinuity in the body, wherein the structural discontinuity is a notch, wherein the ring body has radially spaced-apart inner and outer circumferential surfaces, and wherein the notch extends from the inner circumferential surface to the outer

circumferential surface. Further, the combination fails to disclose forming an axial split at the weakened zone. Applicant agrees with the Examiner that these features are absent from Brand and, as set out above, respectfully asserts that these features are also absent from McOnie and from Timmer.

Additionally, a combination of these teachings, as proposed by the Examiner, would result in an inoperable method of fixing a first part of a multi-part assembly to a second part thereof. As set forth in Applicant's previous response, McOnie does not teach a fixation device. Sealing assembly 27 of McOnie does not fix the stationary seal ring 48 ('ring') to the rotary housing 12 ('housing') of the mechanical seal 10. Instead, the components are held together by setting plates 45 before location in a fluid containing vessel, and thereafter by the split flange 98. As disclosed at column 8, lines 13 onwards, if the setting plates are disengaged, and the split flange is removed, the ring is readily removed from the housing, despite the presence of the sealing assembly 27. It is therefore evident that the rotary face assembly of McOnie is not a fixation device. Furthermore, the elastomeric cup 14 of the sealing assembly, required to hold together the separate halves of the rotary face seal ring 16 would allow relative movement of the first and second part of the multi-part assembly of Brand. A primary requirement of Brand, set forth at P3, lines 27-30 of the published application, is that *'..(the present invention) involves joining the device housing to a ring or collar affixed around the neck of an aerosol canister to minimize the relative movement of the component parts'* Thus, the use of the sealing assembly of Brand in combination with the sealing assembly of McOnie would inevitably result in an inoperable method of fixing together a multi-part assembly due to the inherent flexibility of the elastomeric cup 14. Moreover, the addition of the weakened zone of Timmer would not solve this inherent problem.

Applicant also notes that the cited case law, Keller, 642 F.2d 413, 208 USPQ 871 (CCPA1981), states that the test (for obviousness) is what the combined teachings of the references would have suggested to those of ordinary skill in the art. The teaching of Brand is that a split ring can be used to provide a fixation device for a multi-part assembly. The teaching of McOnie is that a mechanical seal assembly, particularly well suited to use in rotary equipment handling abrasive slurries, is provided by a two-part assembly comprising an elastomeric cup and a rotary face seal ring. Fixation for the assembly is provided separately by setting plates and by split flanges. The teaching

of Timmer is that a fixation device for a multi-part assembly should comprise a continuous ring throughout assembly of the multi-part assembly to avoid tangling and to enable automated assembly. Applicant respectfully asserts that the skilled artisan would not combine these teaching to arrive at the claimed invention of claim 19, and that the Examiner has interpreted the prior art, inappropriately relying on hindsight, to combine Brand, McOnie and Timmer in a spirit which departs from the teachings of at least McOnie and of Timmer.

For at least the reasons set out above, Applicant similarly argues that claim 54 is also novel and inventive over the prior art.

Thus, 19, 24-38, and 43-54 are asserted to be non-obvious, and withdrawal of the pending rejections is requested.

B. Claims 39-42 are not rendered obvious under 35 U.S.C. §103(a) by the teachings of PCT Publication No. WO 01/28887 (Brand *et al.*), U.S. Patent No. 5,192,085 (McOnie), and U.S. Patent No. 4,151,779 (Timmer) in further in view of U.S. Patent No. 2,648,578 (Stearns).

Applicant respectfully traverses these rejections.

In his examination of claim 39, the Examiner has combined Stearns with the Brand, McOnie and Timmer combination outlined above. Applicant respectfully asserts that the further inclusion of Stearns does not address the shortcomings of Brand, McOnie and Timmer combination as failing to render claim 19 obvious (or the claims directly or indirectly thereon).

For these reasons, Claims 39-42 are believed to be non-obvious and withdrawal of the pending rejections is requested.

II. Conclusion

For at least the foregoing reasons, Applicant respectfully requests entry of this Amendment After Final and the issuance of a Notice of Allowance forthwith. Alternatively, Applicant respectfully requests entry of this Amendment After Final as narrowing the issues on appeal. Should the Examiner have any concerns regarding the foregoing, Applicant encourages the Examiner to contact the undersigned, who may be reached at (919) 483-8022.

Respectfully submitted,

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